

REMARKS/ARGUMENTS

Claims 1-20 are pending in the application. Rejections and objections will be addressed in the order presented in the Office Action.

Rejections under 35 U.S.C. § 112

Claims 1-20 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The Office states that the claims contain subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Specifically, the Office states that the applicants "do not provide disclosure enabling for their various aliphatic, cycloaliphatic, and araliphatic groups to be nitrogen or oxygen atoms."

The claims have been amended such that the recited text is no longer present, and thus this rejection is rendered moot.

Rejections under 35 U.S.C. § 102

Claims 1-6, 10, 12-14, and 18 are rejected under 35 U.S.C. § 102(b) as anticipated by Cornet, and Patterson ('071, '817, & '562), each taken individually. The Office argues that Cornet and the Patterson patents disclose compositions for the preparation of polyurethane foams wherein hydrofluorocarbon blowing agents, monools, and silicone surfactants reading on the claimed enhancers are combined in a manner which reads on the compositions claimed. The Office makes no specific citations in the patents, instead referring to each of the documents taken individually in their entirety.

The applicants have amended claims 1 and 12, and therefore dependent claims 9-11 and 13-20, to recite specific blowing agent enhancers, none of which are taught by any of Cornet and Patterson ('071, '817, & '562). No new matter has been added. Cornet teaches the use of two monools, each of which must have a hydroxyl value of between 100 and 200 mg KOH/g. (Col 3/2-5 and Claim 1) As is known to the person of skill in the art, the equivalent weight of an alcohol is given by the equation $E.W. = 56100/\text{hydroxyl value}$, and therefore the corresponding equivalent weights are 561 and 280.5 Daltons, respectively. In

contrast, none of the blowing agent enhancers recited in the amended claims has an equivalent weight in this range; all are lower. Therefore Cornet is not a § 102(b) reference against the subject claims, and the rejections should be withdrawn.

Patterson ('071, '817, & '562) all teach a monool which is a polyoxyalkylene polyether initiated with a C8-C24 fatty hydrocarbon. (Col 9/41-43 and Claim 1 in the patents) Thus all of the monools recited by the Patterson references are terminated with such a hydrocarbon group. In contrast, none of the blowing agent enhancers recited in the amended claims is a polyoxyalkylene polyether initiated with a C8-C24 fatty hydrocarbon; the largest hydrocarbon group on any of the blowing agent enhancers of the amended claims is butyl, a C4 group. Therefore none of the Patterson patents is a § 102(b) reference against the subject claims, and the rejections should be withdrawn.

Claims 1-6, 10, 12-14, and 18 are rejected under 35 U.S.C. § 102(b) as anticipated by Ramey. The Office argues that Ramey discloses compositions for the preparation of polyurethane foams wherein hydrofluorocarbon blowing agents, monools, and other materials reading on the claimed enhancers are combined in a manner which reads on the compositions claimed. The Office makes no specific citations in the patent, instead referring to the entirety of the document. The Office further states that specific halohydrocarbons claimed by the applicants can be readily envisioned from the teachings of Ramey.

Ramey discloses polyurethane compositions including a monohydroxy polyether having a hydroxyl number from about 20 to about 112, corresponding to an equivalent weight from about 2805 to 500.9, respectively. (Col 2/34-40 and Claim 1) In contrast, none of the blowing agent enhancers recited in the amended claims has an equivalent weight in this range; all are lower. Therefore Ramey is not a § 102(b) reference against the subject claims, and the rejections should be withdrawn.

Claims 1-6, 10, 12-14, and 18 are rejected under 35 U.S.C. § 102(b) as anticipated by WO 02/26,913. The Office argues that WO 02/26,913 discloses compositions for the preparation of polyurethane foams wherein hydrofluorocarbon blowing agents, compounds reading on the claimed enhancers, and additives are combined in a manner which reads on the compositions claimed. The Office makes no specific citations in the patent, instead

referring to the entirety of the document. The Office further states that specific silicone surfactant additives claimed by the applicants can be readily envisioned from the teachings of WO 02/26,913.

The WO 02/26,913 reference discloses compositions comprising a refrigerant and a solubilizing agent selected from the group consisting of dichloromethane, chloromethane, methane, ethane, propane, butane, isobutane, pentane, isopentane, neopentane, cyclopentane, iodotrifluoromethane, pentafluorodimethyl ether, 1,1-difluoroethane, fluoroethane, hexafluoroethane, dimethyl ether, ethyl ether, polybutylene glycols, methyl formate, carbon dioxide, sulfur hexafluoride, ethylene, propylene, and mixtures of two or more of these. None of the blowing agent enhancers recited in the rejected claims is included in this list, or anywhere in the WO 02/26,913 reference. Therefore WO 02/26,913 is not a § 102(b) reference against the subject claims, and the rejections should be withdrawn.

Claims 1-6, 10, 12-14, and 18 are rejected under 35 U.S.C. § 102(e) as anticipated by PG PUB 2003/0,078,312. The Office argues that PG PUB 2003/0,078,312 discloses compositions for the preparation of polyurethane foams wherein hydrofluorocarbon blowing agents, compounds reading on the claimed enhancers, and stabilizers are combined in a manner which reads on the compositions claimed. The Office makes no specific citations in the patent, instead referring to the entirety of the document.

The PG PUB 2003/0,078,312 reference discloses compositions in which a blowing agent (HFC-245fa; 1,1,1,3,3-pentafluoropropane) is combined with a vapor pressure depressant. The depressant is described as having a "boiling point higher than or equal to 20°C, is capable of being completely mixed with HFC-245fa, and is in a liquid state at ordinary temperatures." [paragraph 0017] The Examiner will appreciate that literally hundreds or thousands of material might meet this definition, and indeed the subsequent extensive listing of exemplary compounds includes materials from a variety of chemical classes including carbonates, ketones, acetals, glycol diethers, esters, lactones, nitriles, sulfoxides, sulfolanes, and phosphoric esters. Many specific examples are drawn from these broad classes and recited in paragraph 0017, but none of them is recited in the present subject claims.

As set forth in MPEP § 2131.02, a generic chemical formula will anticipate a claim species when the species can be "at once envisaged" from the formula. The applicants urge that none of the blowing agent enhancers recited in the claims can be "at once envisaged" from the extremely broad and diverse description of PG PUB 2003/0,078,312. Therefore PG PUB 2003/0,078,312 is not a § 102(e) reference against the subject claims, and the rejections should be withdrawn.

Rejections under 35 U.S.C. § 103

Claims 2, 4-6, 15, and 20 are rejected under 35 U.S.C. § 103(a) as obvious over Cornet, Patterson ('071, '817, & '562), Ramey, WO 02/26,913, and PG PUB 2003/0,078,312, each taken individually as applied to claims 1-6, 10, 12-14, and 18 above, and further in view of Brunnemann. The Office states that the claims differ from each of Cornet, Patterson ('071, '817, & '562), and Ramey in that use of the specific additives is not recited, but that Brunnemann discloses use of these in urethane synthesis for their solvent effect. The Office concludes that it would have been obvious to use the solvents disclosed by Brunnemann to impart their solvent effect to the materials of Cornet, Patterson ('071, '817, & '562), Ramey, WO 02/26,913, and PG PUB 2003/0,078,312, thereby arriving at the subject claims.

The applicants traverse these rejections, and reiterate that nothing in any of Cornet, Patterson ('071, '817, & '562), Ramey, WO 02/26,913, and PG PUB 2003/0,078,312 teaches or suggests compositions as claimed comprising the recited blowing agent enhancers and the recited blowing agents (or silicone-based surfactant). Brunnemann does not remedy this deficiency, since he does not teach or suggest the inclusion of either blowing agents or blowing agent enhancers of the present application in a polyurethane composition of any sort. In fact, Brunnemann's compositions cannot contain blowing agents because they are for making coatings, and therefore are not intended to make foams. (See Col 17/7, which refers to the use of antifoam additives.) In this respect, they differ from those sought in the present invention, whose objective is to make foams. Nor does he mention the use of silicone-based surfactants at all. Further, the solvents recited by Brunnemann are employed as reaction solvents for synthesizing the polyacrylate resins that are but one component of the coating compositions. The Office states that it would have been obvious to use the solvents disclosed by Brunnemann to impart their solvent effect to the materials of Cornet, Patterson ('071, '817, & '562), Ramey, WO 02/26,913, and PG PUB 2003/0,078,312, thereby

arriving at the subject claims, but there is no teaching in any of these references that a material having solvent properties suitable for synthesizing a polyacrylate resin would enhance blowing agent activity in making polyurethane foams.

The WO 02/26,913 reference defines the solubilizing agent as "a compound that increase the solubility of a hydrofluorocarbon refrigerant and a lubricating oil in one another. [page 6/28-29] The term "lubricating oil" refers to "mineral or hydrocarbon oil; alkyl benzene oil; white or paraffinic oil; and mixtures thereof." [page 7/7-8] Thus, WO 02/26,913 reference teaches the use of certain materials (none of which is recited in the subject claims) as solubility improvers for refrigerants in lubricating oils. It does NOT teach anything suggesting the nonanalogous benefit of using any of these materials, much less those recited in the subject patent, as enhancers of blowing agent performance in polyurethane foam production.

Thus the Office has not provided a motivation to modify the compositions of any of Cornet, Patterson ('071, '817, & '562), Ramey, WO 02/26,913, and PG PUB 2003/0,078,312 by including any of the solvents recited in Brunnemann. Therefore, a prima facie case of obviousness has not been presented, and the rejection of claims 2, 4-6, 15, and 20 should be withdrawn.

Claims Not Rejected

The applicants note that the Examiner has not rejected any of claims 7-9, 11, 16, 17, and 19 under either 35 U.S.C. § 102(b) or 35 U.S.C. § 103(a), and has cited no prior art against these claims. Since the rejection of these claims under 35 U.S.C. § 112, first paragraph is made moot by the amendments presented herein, these claims should now be allowed.

Double Patenting

Claims 1-20 are provisionally rejected under the judicially created doctrine of obviousness-type double patenting as unpatentable over claims 1-24 of copending Application No. 10/672,363. The applicants will file a suitable terminal disclaimer if a satisfactory scope of claims is allowed in this application.

Conclusion

For all of the reasons recited above, the applicants submit that all of claims 1-20 are in condition for allowance, and respectfully request early notification to that effect. The Applicant invites the Examiner to contact his undersigned representative by telephone if it appears that a phone discussion may facilitate prosecution of the application.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael Leach". The signature is fluid and cursive, with the first name "Michael" written in a larger, more prominent script than the last name "Leach".

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